AUCTORES
Globalize your Research

Journal of Dermatology and Dermatitis

Ahmad Reza Shahraki*

Open Access

Case Report

Necrotizing Fasciitis in Iv Drug Abuser by Oil Injection: A Case Report

Ahmad Reza Shahraki*

General Surgeon, Assistant professor, Department of Surgery, Medical Faculty, Zahedan University of Medical Sciences and Health Services, Zahedan, Iran.

***Corresponding Author:** Ahmad Reza Shahraki, General Surgeon, Assistant professor, Department of Surgery, Medical Faculty, Zahedan University of Medical Sciences and Health Services, Zahedan, Iran.

Received date: 11 July 2024; Accepted date: 19 July 2024; Published date: 08 August 2024

Citation: Ahmad R. Shahraki, (2024), Necrotizing Fasciitis in Iv Drug Abuser by Oil Injection: A Case Report, *Dermatology and Dermatitis*, 9(5); **DOI:10.31579/2578-8949/169**

Abstract

Necrotizing fasciitis (NF) is a necrotizing soft tissue infection that can result in fast tissue loss, necrosis, and potentially fatal acute sepsis. Diabetes, cancer, alcohol abuse, and chronic liver and renal disease are all risk factors for NF.
Our case was a 50 years old male with IV drug abuse that inject oil in his arms and admitted by diagnosis of Necrotizing Fasciitis and perform serial surgery and antibiotic therapy for him to save his life and his arm.
NF is a rare bacterial inflammation (infection) that can destroy the skin and underlying tissues (connective tissue, subcutaneous fat, muscles, and muscle membranes). The disease can be very dramatic, with shock and damage to internal organs. In this case report, serial debridement with adequate antibiotherapy followed by reconstructive surgeries were made. An early diagnosis remains challenging and crucial for salvaging the affected area. Necrotizing fasciitis is a life-threatening soft tissue infection characterized by a rapid spreading infection of the subcutaneous tissue and in particular the fascia. The management of infected tissues requires a rapid diagnosis, immediate aggressive surgical management and an extended debridement. In some cases, early amputations of the affected tissues and maximum intensive care treatment, in case of sepsis, are required. Due to a rising number of cases we aimed to report this case.

Keywords: necrotizing; fasciitis; surgery; case report; debridement; iv drug abuse

Introduction

Necrotizing fasciitis (NF) is a necrotizing soft tissue infection that can result in fast tissue loss, necrosis, and potentially fatal acute sepsis. Diabetes, cancer, alcohol abuse, and chronic liver and renal disease are all risk factors for NF [1]. NF is a rare bacterial inflammation (infection) that can destroy the skin and underlying tissues (connective tissue, subcutaneous fat, muscles, and muscle membranes). The disease can be very dramatic, with shock and damage to internal organs. Left untreated, the disease can lead to death. Usually, necrotizing fasciitis develops very quickly and can become life-threatening within hours or days. Immediate treatment and hospitalization are urgent, and usually, the inflamed tissue must be surgically removed [2]. There are two types of NF. Type I is polymicrobial, whereas type II is monomicrobial. Group A streptococcus (type 2 NF) is the most common cause of NF, and it can lead to streptococcal toxic shock syndrome (STSS), which is characterized by shock and multiple organ failures caused by a toxin produced by group A streptococcus. NF and STSS are occasionally seen together [in 40% of NF patients and 6% of other individuals (p0.001)] (3). Differentiating NF from other soft tissue infections is notoriously tough, but it is critical since NF is a medical emergency that requires immediate and intensive surgical debridement. As a result, this condition puts physicians' diagnostic abilities and surgical tenacity to the test [3]. Group A streptococci live on the skin and throat of many people without causing harm, but can sometimes cause mild and, exceptionally, severe infections. Necrotizing fasciitis is one of the most serious infections caused by group A streptococci because the bacterium creates large amounts of toxins in the body. A combination of different bacteria is often the cause. Inflammation can spread from superficial as well as internal tissue damage. The pathogens can get into the soft tissue through small cuts, scratches, other wounds, or burns [4]. The bacteria can also come with the blood from other parts of the body and colonize the affected area. It is often not possible to find out how the bacterium got into the body. As a rule, the body's immune system succeeds in killing bacteria that enter the body. That is why it is often older people or people with a weakened immune system who are affected by the disease. However, necrotizing fasciitis can also occur in young, healthy people [5]. Symptoms of necrotizing fasciitis can appear very quickly - within a day - after a cut or other wound in the skin. The first and typical symptom of the disease is the rapid onset of severe pain in the infected area. The affected patients develop fever and

chills, and the painful area may be red, slightly swollen, warm, and with overlying blisters. As the necrotizing fasciitis progresses, the inflamed area may turn black and blue, and it can be accompanied by shock due to low blood pressure. This leads to impaired consciousness, confusion, difficulty concentrating, cold sweats, and dizziness, or streptococcal toxic shock syndrome (STSS) [6].

Case presentation:

This case was a 50 years old male that referred to surgery parts because of pain and skin deformities in right upper extremity (figure1). We admit him and start take history that shows he is an IV drug abuser and because of his beliefs he injects oil in his arm (figure3). We did Doppler ultrasonography and take lab data for him. It shows high CRP, ESR and 38000/ml WBC. Us shows cobbled stone appearance and normal arterial blood flow (figure2).

After diagnosis we start blood cultures, and start antibiotic therapy and planned serial surgery. We perform 5 session surgery and heavy debridement and after wellbeing we graft new skin. We target to save his life and his hand finally, that after 20 days we can and discharge him healthy with a functional hand.

Figure 1: Blister and deformity of skin

Figure 2: Necrotizing fasceitis

Figure 3: scars of injections

Discussion:

Tenderness, edema, erythema, and discomfort at the afflicted location, which mirrors non-severe soft tissue infections (NSTIs) such as cellulitis and erysipelas, make NF difficult to identify in the early stages [7]. The cardinal NF symptom is intense pain at the outset that is out of proportion to physical findings [8,9,10]. The patient was rushed into surgery and a thorough debridement with complete removal of the necrotic fascia was performed. The diagnostic options are very limited and the most important determinant of a patient's survival is early recognition and immediate treatment, which, however, is hampered by the fact that the early symptoms are rather non-specific and hence difficult to detect. So far, there is no laboratory parameter specific for NF. The so-called Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) score has been proposed to categorise the average risk of NF [2]. Because of the lack of reliable laboratory parameters and specific symptoms, it is essential that patients are presented immediately to an experienced surgeon and rushed into surgery at the mere suspicion of NF. According to the literature, the mortality is about 6% when patients are operated on within 12 h of onset of symptoms, but up to 30% after 24 h [2]. It is required that all of the necrotic tissue is removed during the first surgical intervention [2]. Necrotizing fasciitis is one of the most common soft tissue infections, with a high risk of major amputation and a mortality ranging from 6 to 33% which has not changed in the past 20 years. Early surgical resection of necrotic tissue plays a key role in determining the prognosis. Nawijn et al. identified an optimal 6 hours window from presentation to surgery. Symptoms of necrotizing fasciitis mimic those of common skin infections, such as erysipelas and cellulitis, making rapid

surgical management difficult. In this context, the aid of point-of-care-ultrasound is a valuable tool for early diagnosis, detecting the presence of subcutaneous thickening, gas and perifascial liquid. Other characteristic ultrasound findings include the "cobblestone" appearance of the subcutaneous soft tissues and reverberation artifacts due to hyperechoic outbreaks, defined as "snow globes" due to the presence of heterogeneous swirling material, and "dirty shadowing" due to the foggy shadow created by the gas [14].

Conclusion:

In the early stages of the infection, the bacteria spread out along the fascial planes. Patients usually report of severe pain which cannot be explained by a visible injury, but because the skin is still unaffected and accompanying symptoms such as erythema or swelling are non-specific, early stages escape detection [12], and can be misdiagnosed as cellulitis because the symptoms are very similar [13]. Only in the more advanced stages, patients quickly develop blisters, bullae, skin fluctuance and skin induration, followed by formation of haemorrhagic bullae, skin anaesthesia, skin necrosis and crepitation Patients also quickly develop systemic signs of infection such as hypotension and respiratory distress [11]. Necrotizing fasciitis is a life-threatening soft tissue infection characterized by a rapid spreading infection of the subcutaneous tissue and in particular the fascia. The management of infected tissues requires a rapid diagnosis, immediate aggressive surgical management and an extended debridement. In some cases, early amputations of the affected tissues and maximum intensive care treatment, in case of sepsis, are required. Due to a rising number of cases we aimed to report this case [15].

Learning points: (11)

Patients frequently first present with systemic signs of an infection at the internal medicine department. Close attention should be paid to painful skin lesions.

Patients might report of severe pain which cannot be explained by a visible injury, because the bacteria first spread out along the fascial plains.

Any surgical discipline might be confronted with cases of necrotising fasciitis. It is vital to keep this disease in mind and to act quickly.

Even though the Laboratory Risk Indicator for Necrotizing Fasciitis (LRINEC) score might be helpful, a negative LRINEC score does not rule out necrotising fasciitis.

Treatment of necrotising fasciitis requires a multidisciplinary approach and various specialties should be involved early on.

Declarations:

Ethical Approval and Consent to participate:

The content of this manuscript is in accordance with the declaration of Helsinki for Ethics. No committee approval was required. Oral and written consent to participate was granted by his wife.

Consent for publication:

"Written informed consent was obtained from the patient's legal guardian for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal."

- Availability of supporting data

It is available.

- Competing interests:

The author declares that they have no competing financial interests and nothing to disclose.

- Funding: There is no funding.

Authors' contributions:

Ahmad Reza Shahraki is the surgeon of patient and writes this paper.

The author declares that they have no competing financial interests and nothing to disclose.

Acknowledgements

NF is a rare bacterial inflammation (infection) that can destroy the skin and underlying tissues (connective tissue, subcutaneous fat, muscles, and muscle membranes). The disease can be very dramatic, with shock and damage to internal organs. In this case report, serial debridement with adequate antibiotherapy followed by reconstructive surgeries were made. An early diagnosis remains challenging and crucial for salvaging the affected area.

References:

1. Zeaiter N, Maassarani D, Ghanime G, Sleiman Z. (2022). A Case Report of Rapidly Necrotizing Fasciitis Post-Falling Down Treated Reconstructively. Cureus. 2022 Aug 16:14(8):28055.
2. Salmaso R, Vindigni V, Bassetto F. (2012) Necrotizing fasciitis: classification, diagnosis, and management. Lancerotto L, Tocco I, J Trauma Acute Care Surg. 72:560-566.
3. Nawijn F, Wassenaar EC, Smeeing DP, et al. (2019). Exhaustion of the immune system by Group A Streptococcus necrotizing fasciitis: the occurrence of late secondary infections in a retrospective study. Trauma Surg Acute Care Open, 4:0.
4. Lahham S, Shniter I, Desai M, Andary R, Saadat S, Fox JC, Pierce S. Am. (2022). Point of care ultrasound in the diagnosis of necrotizing fasciitis. J Emerg Med, 51:397-400.
5. Golger A, Ching S, Goldsmith CH, Pennie RA, Bain JR. (2007). Mortality in patients with necrotizing fasciitis. Plast Reconstr Surg, 119:1803-1807.
6. Ikebe T, Tominaga K, Shima T, et al. (2015). Increased prevalence of group A streptococcus isolates in streptococcal toxic shock syndrome cases in Japan from 2010 to 2012. Epidemiol Infect, 143:864-872.
7. Singh G, Sinha SK, Adhikary S, Babu KS, Ray P, Khanna SK. (2002). Necrotizing infections of soft tissues--a clinical profile. Eur J Surg,168:366-371.
8. OG, Kaul R, McGeer A, Low DE, Green K, Schwartz B, Simor AE. Am. (1997). Population-based surveillance for group A streptococcal necrotizing fasciitis: clinical features, prognostic indicators, and microbiologic analysis of seventy-seven cases. Study J Med,103:18-24.
9. Jama. Hoge CW, Schwartz B, Talkington DF, Breiman RF, MacNeill EM, Englender SJ. (1993). The changing epidemiology of invasive group A streptococcal infections and the emergence of streptococcal toxic shock-like syndrome: a retrospective population, 269:384-389.
10. Bisno AL, Stevens DL. N Engl, (1996). Streptococcal infections of skin and soft tissues. J Med, 334:240-245.
11. Dapunt U, Klingmann A, Schmidmaier G, Moghaddam A. (2013). Necrotising fasciitis.
12. Wong CH, Wang YS. (2005). The diagnosis of necrotizing fasciitis. Curr Opin Infect Dis, 18:101-106.
13. Mulla ZD. (2005). Group A streptococcal necrotizing fasciitis: reducing the risk of unwarranted litigation. Am J Emerg Med, ;23:578-579.
14. Cantarella, S, Casamassima, A, Bussone, D.M. et al. (2023). A necrotising fasciitis: case report. J Ultrasound 26:147-150.
15. Leiblein, M, Marzi, I, Sander, A.L. et al. (2018). Necrotizing fasciitis: treatment concepts and clinical results. Eur J Trauma Emerg Surg 44, 279-290.

DOI:10.31579/2578-8949/169